

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

Claims 1 - 12 (cancelled).

Claim 13 (currently amended). ~~The device of claim 12,~~ A device enabling a user to play an audio signal, said device comprising:

a jack containing a plurality of connection points; and
a detector circuit examining an impedance present between at least a pair of said plurality of connection points and determining whether a headset is present in said jack based on a value of said impedance;

wherein said detector circuit measures a voltage between said pair of said plurality of connection points and determines that said headset is present if said voltage is low compared to a reference voltage;

wherein said detector circuit comprises:
a first node being coupled to receive a bias voltage, wherein said first node is coupled to one of said pair of connection points and wherein the other one of said pair of connection points is coupled to Vss, whereby said bias voltage is presented at said first node if said headset is not present and a low voltage is presented at said first node if said headset is present; and

a comparator having a first input terminal and a second input terminal, said first input terminal being connected to said first node, said second input being connected to said reference voltage, wherein said reference voltage is generated as a fraction of said bias voltage, wherein said comparator generates a signal having a first logical value if said headset is present and having a second logical value otherwise; and

wherein said reference voltage equals $(7 * \text{said supply voltage} / 8)$, wherein '*' represents multiplication operator and '/' represents division operator.

Claim 14 (currently amended). ~~The device of claim 12,~~ A device enabling a user to play an audio signal, said device comprising:

a jack containing a plurality of connection points; and

a detector circuit examining an impedance present between at least a pair of said plurality of connection points and determining whether a headset is present in said jack based on a value of said impedance;

wherein said detector circuit measures a voltage between said pair of said plurality of connection points and determines that said headset is present if said voltage is low compared to a reference voltage;

wherein said detector circuit comprises:

a first node being coupled to receive a bias voltage, wherein said first node is coupled to one of said pair of connection points and wherein the other one of said pair of connection points is coupled to Vss, whereby said bias voltage is presented at said first node if said headset is not present and a low voltage is presented at said first node if said headset is present; and

a comparator having a first input terminal and a second input terminal, said first input terminal being connected to said first node, said second input being connected to said reference voltage, wherein said reference voltage is generated as a fraction of said bias voltage, wherein said comparator generates a signal having a first logical value if said headset is present and having a second logical value otherwise; and

wherein said detector circuit further comprises:

a resistor connecting said first node to a second node;

a micbias driver providing a driver voltage on said second node to bias any microphone present in said headset; and

a first switch to couple a supply voltage to said second node when in a closed state, said first switch being in an open state if said micbias driver is providing said driver voltage on said second node.

Claim 15 (original). The device of claim 14, wherein said detector circuit further comprises:

a plurality of components detecting a type of said headset, wherein said plurality of components are turned off if said headset is determined to be absent.

Claim 16 (original). The device of claim 15, wherein said detector circuit determines whether said headset is removed from said jack after determining that said headset is present in said jack, said detector circuit further comprising:

a second switch to couple a detect pulse to said second node when in a closed state, said third switch being in an open state if said micbias driver is turned on, said detect pulse being of short pulse width and being repeated with a long period, thereby reducing total power consumption of said device.

Claim 17 (original). The device of claim 16, further comprising:

a processing unit receiving an interrupt from said detector circuit if said headset is determined to be present; and

a register storing a bit indicating said headset is determined to be present.

Claims 18 - 23 (cancelled).

Claim 24 (currently amended). ~~The device of claim 23,~~ A device enabling a user to play an audio signal, said device comprising:

a jack containing a plurality of connection points, said jack being designed to receive a first headset, said first headset making contact with at least one of said plurality of connection points upon insertion into said jack; and

a detector circuit measuring an impedance between at least one pair of said plurality of connection points and determining a type of said first headset according to said impedance;

wherein said type comprises one of a stereo headset type, a cellular headset type and a stereo+cellular headset type according to said impedance;

wherein said detector circuit determines whether said first headset is of said stereo headset type by measuring a first voltage between a first pair of said plurality of connection points and determines that said first headset is a stereo headset type if said first voltage is low compared to a reference voltage;

wherein said detector circuit determines whether said first headset is a cellular headset type by measuring a second voltage between a second pair of said plurality of connection points if said first headset is determined not to be of said stereo headset type and determines that said first headset is of said cellular headset type if said second voltage is high compared to said reference voltage; and

wherein said detector circuit comprises:

a third node being coupled to receive a supply voltage, wherein said third node is coupled to one of said second pair of connection points and wherein the other one of said second pair of connection points is coupled to Vss, whereby said supply voltage is presented at said third node if said first headset is of said cellular headset type and a low voltage is presented at said third node if said first headset is not of said cellular headset type; and

a second comparator having a first input terminal and a second input terminal, said first input terminal being connected to said third node, said second input terminal being connected to said reference voltage, wherein said second comparator generates a second signal having a first logical value if said first headset is of said cellular headset type and having a second logical value otherwise.

Claim 25 (original). The device of claim 24, wherein said detector circuit determines that said first headset is a stereo+cellular headset type if said first headset is determined not be of either of of said stereo headset type and said cellular headset type.

Claim 26 (original). The device of claim 25, wherein said second pair of connection points comprise a connection point which connects to a speaker terminal and another connection point which connects a ground terminal in said first headset.

Claim 27 (original). The device of claim 26, further comprising:

- a resistor connecting said first node to a second node;
- a micbias driver providing a driver voltage on said second node to bias any microphone present in said first headset;
- a first switch to couple said supply voltage to said second node when in a closed state, said first switch being in a open state if said micbias driver is providing said driver voltage on said second node; and
- a second switch to couple said supply voltage to said third node through a second resistor when in a closed state, said second switch being in a open state if said first headset is determined to be of said stereo headset type.

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Claim 28 (original). The device of claim 27, wherein said detector circuit determines whether a button is pressed if said first headset is of said stereo+cellular headset type or cellular headset type, wherein said first comparator is designed to indicate whether said button is pressed.

Claim 29 (original). The device of claim 28, wherein said detector circuit determines whether said button is pressed, said detector circuit further comprising a third switch to couple a detect pulse to said second node when in a closed state, said third switch being in a open state if said micbias driver is turned on, said detect pulse being of short pulse width and being repeated with a long period, thereby reducing total power consumption of said device.

Claim 30 (original). The device of claim 29, wherein said reference voltage equals (said supply voltage /8), wherein '/' represents a division operator.

Claim 31 (original). The device of claim 30, further comprises a register, wherein said register comprises a plurality of bits indicating a type of said first headset.

Claim 32 (original). The device of claim 31, further comprises a processing unit receiving an interrupt from said detector circuit if said button is determined to be pressed.

Claim 33 - 39 (cancelled).